---== ST REPORT ONLINE MAGAZINE ==---

"The Original 16/32bit Online Magazine"

from

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* ASHTON TATE LOSES COPYRIGHT FOR DBASE! *
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> The Editor’s Podiumâ ¢

This is our Christmas Season Issue.. Tis the season etc... so, please allow this tired writer a moment to reflect on the times. How easy it is deduce that the economy has slowed. Listen to the complaints and moaning. But wait! There is relatively little to be heard. In fact, there’s talk that things have indeed picked up and are getting better by the day!

Folks its true, the marketplace activity, in general, has picked up quite a bit and it is showing no signs of slowing down. The announcements by Atari of the new products and of course, the FCC Class B type acceptance of the Mega STe has certainly given the market a shot in the arm. That goodness for the online magazines as they and they alone bring the news out when it is still news and suitable to be called that. The sad note this week is seeing the hard copy periodicals arriving at the newsstands and at the user’s homes touting the Comdex affair from last November as NEWS! To top it off, we see where certain rumors that have since died are resurrected by these carriers of the "latest news". ’Tis a shame but that’s the way it is. Not much we can do about that. Perhaps the hard copy periodicals should stick to reviews and photo coverage of the latest hardware and software? Hard News is no longer news by the time the hard copies arrive.

We can however let one hard copy magazine know that the inaccuracies are getting out of hand.. WHAT??? that coming from me??? Absolutely, there is such a thing as tweaking a nose or two to get a point across. But... when it becomes an outright amputation of the nose its a bit much. Please, I am no angel, but one of my colleagues, Frank Sommers has obviously latched onto a very poor source of info. Come’on Frank, check this "source" out thoroughly.. the guy’s throwing you more curves than Sandy Koufax threw in his entire career. Hold it! Hold it!.. Current Notes is a dynamite magazine, if I didn’t care I wouldn’t say a word!! I do care, Current Notes is a respected, well read magazine that I for one would like to see around for a long time. This is by no means a slap at CN or its fine staff. Just an alarm that cries for attention and correction.

May the warmth of this, the Yuletide season, find you and your families together, healthy and happy.

Ralph......

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WHAT'S NEW IN THE ATARI FORUMS (Dec. 21)

THE STAFF OF THE ATARI FORUMS ON COMPUSERVE
WISH YOU AND YOUR FAMILY
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MINI BBS VERSION 25

BBS25.LZH, available in LIBRARY 1 of the Atari Productivity Forum (GO ATARIPRO), is the newest version of MINI BBS from Norway. Supports 9600 baud modems, XMODEM, YMODEM and ZMODEM downloading, and users can ARC mail and text files for faster downloading. Can autoboot in case of power outages, and can be run from a 1/2 Meg 520ST with only one floppy drive. Includes the ability to use a remote ST as Sysop console through a MIDINET program, included.

NEW CALENDAR PROGRAM AVAILABLE

See calendar of any month, any year 1-9999. Attach 'events' to days by date or by position in month - never forget your anniversary again! Display events for the day, browse through events, find a specific event. Custom Desk menu entry makes it easy to distinguish multiple copies (for Birthdays, Holidays, etc). Preloaded with 4 dozen events! Runs as a PRG or ACC on any ST/TT in any resolutin. Download file CAL32.ARC from LIBRARY 1 of the Atari Productivity Forum (GO ATARIPRO).

NEW UPLOADS TO THE ATARI PORTFOLIO FORUM

The following are just a few of the new files available in LIBRARY 1 of the Atari Portfolio Forum (GO APORTFOLIO):

Lane Lester uploaded a text file (LODTRM.ZIP) that explains how to get XTERM2 into a Portfolio through the serial interface for the first time. Not suggested for the easily frustrated! David Hayden uploaded a text file that describes Dave's Dream Portfolio (DREAM.PF). His idea was to stimulate discussion on how to improve the current generation Portfolio and solicit ideas for the next version. Finally, download FT4LPT.ARC to hack FT.COM in order to use your second printer port of your desktop PC to communicate with your Portfolio.

NEW FILES IN ATARI VENDORS FORUM

Latest ICD AdSCSI host adapter software now available in LIBRARY 7 of the Atari Vendors Forum (GO ATARIVEN) courtesy ICD's Tom Harker.

The following new files are now available from Double Click Software in LIBRARY 13 of the Atari Vendors Forum (GO ATARIVEN):

DCDSND.ARC - DC DMA SOUND PLAYER plays digitized sounds on STe.
DCFLIT.ARC - DC FLIGHT turns on the floppy drive light every time a RAMDISK is accessed.

For a copy of the latest ISD Marketing customer mailout on Calamus, please see file CUSUPD.TXT in LIBRARY 17 of the Atari Vendors Forum (GO ATARIVEN). It contains information relevant to our registered Calamus and Outline Art owners only and includes quite a few very special offerings for a limited time only.

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> CPU REPORTâ ¢
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Issue # 96
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by Michael Arthur

CPU INSIGHTSâ ¢
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AN ODE TO THE NUTS AND BOLTS OF MULTI-TASKING

Part I

There seems to be much confusion in the microcomputer industry over the various facets of and techniques used in multitasking. While phrases such as MMU's, virtual memory, and priority schemes help to describe its services, they also tend to confuse the issue. Therefore, there is a need to fully understand this very complex issue.

Multitasking, as you may know, is a way of making more than one application share system resources in such a way that they appear to run at the same time. This involves two things: Resource Management, and (to a lesser extent) Interprocess Communication.

RESOURCE MANAGEMENT

Resource management is the method by which the system distributes

the computer's CPU time, system I/O, and memory between tasks. The most important of these functions (at least to a multitasker) is CPU time.

Distributing the CPU's time between each process is done by first dividing the CPU's time into segments called time slices, and then distributing enough time slices each second (using a processor scheduler) to each process (or task) that is running on the system so as to give each task a certain amount of time to use the CPU. The scheduler must give out time slices in such a way that:

1) All processes are able to use the CPU for a certain amount of time.

2) Heavily CPU-intensive tasks get as many time slices as possible.

3) CPU time is used as efficiently as possible.

4) All tasks are completed as quickly as possible.

5) The program in the foreground (that is, the program that the user is currently interacting with) functions as quickly as possible, so as to increase the system's responsiveness to the user.

These goals are often contradictions within themselves, as the only way to make programs run faster in the foreground is to steal time slices that would be used by programs running in the background, and if programs in the background are CPU-intensive (or if there are many programs being run at the same time) the scheduler must dole out a reasonable amount of time slices to each program. But as this process necessarily limits the speed with which all tasks are completed, the system runs into many difficulties in the attempt to be more efficient. Obviously, the life of a multitasking operating system is not easy....

Fortunately, System I/O can often be done while the CPU is doing other things, meaning that processes must relinquish the CPU while performing I/O operations. The scheduler then has more time slices to give to other programs, and this speeds up system operation. One catch, though: As System I/O is comparatively slow in the first place, perceived system performance (especially for foreground programs that are doing I/O operations) drops markedly, as System I/O must also be multitasked. This, predictably, tends not to be efficient. In such cases, a large (32K-128K) I/O Cache (like a Print Spooler or Disk Cache) can become necessary.

The system's job of allocating all available memory to the various running tasks, while not as apparent to the end user as managing CPU time or System I/O, is just as essential. All operating systems must fairly and efficiently distribute memory to any program(s) running on that computer. But while single tasking operating systems just allocate all RAM to the application currently running, multitaskers not only have to make all memory available to the tasks currently running, but to conserve as much memory as possible for programs that will be run later.

In order to do this, after the operating system has allocated enough memory for a process to run in, it designates the rest of the computer's RAM as a big pool of Shared Memory. This special segment of RAM is where the system gets memory to allocate for new tasks, and to allow current tasks to use as much memory as they need, PROVIDED that the system gives the tasks permission. Since the system controls what memory is allocated

to all processes, Shared Memory makes memory management a lot easier for multitaskers. When the system has allocated all the RAM in the computer, for example, it simply deallocates all memory that is not currently being used by running tasks to replenish its supply of Shared memory.

It is relatively simple to implement shared memory in multitasking systems built from the ground up, as processes in such systems have to ask the system for memory before they can use it. In add-on multitaskers, however, the system tells the task that the segment of memory that it allocated to it is all the memory that is available, and as the task needs more memory, the system allocates more to it if possible. Likewise, if a task does not need a certain section of RAM allocated to it, the system deallocates that section of RAM, adding it to its supply of Shared Memory.

Since the system can only deallocate so much memory from tasks, however, a multitasking OS must find other ways to conserve memory. One excellent way is to have built-in code libraries. These are functions that an application generally performs (such as floating point operations, screen handling, etc.) that the system makes available to programmers for their use, which have MANY benefits. Some are that the resulting program is much smaller than it would normally have been (which conserves memory), the operating system can manage tasks much more quickly and efficiently (since these Libraries are part of the OS itself), resulting in quicker execution of those tasks, and compatibility is ensured, so that hardware products (such as math co-processors) can work with all programs, and so improvements made to the operating system directly benefit the system's applications.

INTERPROCESS COMMUNICATIONS

Resource Management is a vital component of multitasking operating systems, doing the integral functions required of them. But even though a multitasking system can be designed using just it, the potential uses of multitaskers are squandered if it doesn't provide some way for all running tasks to communicate and exchange information with each other. This capability (called InterProcess Communications, or IPC) is of great advantage to any serious multitasker. Just about any aspect of computing, from sending data from a database to a spreadsheet, to E-Mail services on a Local Area Network can be made more efficient when applications can work together. And since those applications are all running at the same time, things that aren't possible on normal systems (such as a spreadsheet constantly being updated with financial data from a database) become easy for multitasking systems.

While the possible implementations of Interprocess Communications are incalculable, here are some of the ones that are most commonly used in multitasking operating systems:

Semaphores:

When a word processor is printing a document in a multitasking system, you usually want it to finish before another program starts printing something else. In order for a scheduler to efficiently handle when two tasks compete for a certain system resource, it assigns a semaphore to the resource. A semaphore is a variable (such as a yes/no flag, or integer) that can be read or manipulated by any task, so it can gain sole use of that resource. When a task tries to access a resource with a semaphore, the scheduler first makes sure that no other task is currently using the resource. If the semaphore is not set to indicate that the resource is

being used, then the task is given access to the resource. The system then lets the task set the semaphore to show that a task is currently using the resource. After the task is finished, it then restores the semaphore's setting to normal, so other tasks can use the resource that it regulates.

Pipes:

One of the more touted uses for multitaskers has been to download a file using a terminal program in the background, while typing text in a word processor. If a person using this setup wanted to send all the messages on a BBS to the word processor, so as to read and answer them at his/her own convenience, a multitasking system would need a way for the term program to send the messages to the word processor. Pipes provide a one-way method for a task to send data a character at a time to another task. They are commonly used to take the output of one task and send it to another task as input.

Queues:

Queues are simply a larger type of pipe. While pipes only send data a character at a time from one task to another, queues allow whole segments of data (such as a picture or E-Mail message) to be sent from one task to another. As in pipes, this method is purely one way....

Named Pipes:

Named pipes can be considered a step above ordinary pipes or queues. Like queues, they allow tasks to send blocks of data to each other, but unlike ordinary pipes, they allow data to be sent in both directions. You could also do this with a pair of ordinary pipes, but Named Pipes are more efficient. Named pipes are especially useful in a LAN or multiuser system, as each computer in such networks needs to communicate with the others in this fashion.

Signals:

Signals, or software interrupts, tell tasks to immediately handle an asynchronous event, regardless of whatever it is doing at the time.

Shared memory can also be used for Interprocess Communications, by letting two programs use a segment of memory to exchange data. This has the advantages of speed (as this would essentially be a direct data transfer) and the ability for both programs to directly manipulate the contents of this type of shared memory.

In Part I of this series, we covered the inner workings of most multitasking operating systems, describing what a multitasking scheduler must go through, while showing how Interprocess Communications help make applications (and indirectly, multitasking) more efficient.

In Part II, we will explore the different implementations of multitasking, while showing some of the other utilities, such as virtual memory, that are used with multitasking to bring it more flexibility and power, and examining some of the problems associated with multitasking systems.

> CPU STATUS REPORTâ ¢ LATE BREAKING INDUSTRY-WIDE NEWS
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- Washington, DC WINDOWS DOMINATES EUROPEAN SOFTWARE SALES

According to a report recently released by the Software Publishers' Association, European sales of all DOS-based software written by US companies has increased by 61 percent during the 3rd Quarter of 1990. In that period, Macintosh sales went up by 83 percent, and overall European sales rose by 63 percent. In making its report, the SPA used the combined sales figures of 32 major US Software companies in 18 software categories (including spreadsheet, word processing, and DTP software). These companies earned over $228 million in European sales during the 3rd Quarter of 1990.

The SPA also found that sales of Microsoft Windows-based products rose by 243 percent. SPA representatives also stated that since the Macintosh is a relatively small segment of the European computer market (though it is VERY popular in France), the increased growth in Windows applications sales indicates that Microsoft Windows is now the second largest platform in the European computer industry (with DOS itself taking first place). Among the more interesting findings of the SPA report were that Germany/Austria is now the fastest-growing market in the European computer industry for US firms....

- Tokyo, Japan NEC TO SHIP SAMPLES OF 64meg MEMORY CHIPS

NEC has announced that it will begin shipping samples of its prototype 64-megabit DRAM chip by next summer. NEC, who plans to produce their new chips at an existing factory that now makes 4-megabit DRAM chips, says that their 64 Meg DRAM chip will have an access time of 40 nanoseconds, and that it could be commercially available by Early 1992. If so, then NEC would be the first company in the world to ship such a product.

4-megabit DRAM chips are only now beginning to gain widespread use, and 16-megabit DRAM chips haven't been available until recently. NEC's introduction of a 64 Meg DRAM chip at this time could mean that high-end microcomputers may begin to have 64-128 Megs of RAM as standard equipment by Early 1994. Also, several other Japanese chipmakers (including Fujitsu and Toshiba) have indicated that they will be announcing 64 Meg chips shortly.

- Los Angeles, CA ASHTON-TATE LOSES DBASE COPYRIGHT!

A Federal Court has dismissed the copyright-infringement lawsuit between Ashton-Tate and Fox Software by declaring that Ashton-Tate's copyright on the dBASE language is invalid. In this suit, Ashton-Tate had claimed that Fox Software illegally used the dBASE language in its FoxBase

database program, which now owns a significant share of the DOS database market.

Wayne Ratcliff, who originally wrote dBASE I, had developed a database program called JPL/DIS while working for NASA's Jet Propulsion Laboratories in the 1970s. During this lawsuit, it was revealed that dBASE was partly based on JPL/DIS. Curiously, Ashton-Tate didn't reveal this link between dBASE and JPL/DIS when it applied for a copyright on the dBASE language. Since Ashton-Tate "failed to disclose material information to the United States Copyright Office", the judge ruled that the dBASE copyright was invalid.

While Ashton-Tate is preparing to appeal the ruling, many industry analysts feel that this case has put the dBASE language (one of the most commonly used computer languages) in the Public Domain. Interestingly enough, Ashton-Tate is now being sued by companies who, having licensed the dBASE language, are now claiming that Ashton-Tate defrauded them. This ruling could also affect Lotus's copyright infringement case against Borland, since 1-2-3 is based on Visicalc.

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:HOW TO GET YOUR OWN GENIE ACCOUNT:

To sign up for GEnie service: Call: (with modem) 800-638-8369.

Upon connection type HHH (RETURN after that).
Wait for the U#= prompt.

Type: XTX99587,CPUREPT then, hit RETURN.

**** SIGN UP FEE WAIVED ****

The system will now prompt you for your information.

-> NOW! GENIE STAR SERVICE IS IN EFFECT!! <-

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A LITTLE OF THIS, A LITTLE OF THAT

by Michael Lee

I'm sure that the thousands of loyal ST PageStream users have been wondering what has happened to PageStream 2.0. Here's a compilation of some recent posts from the Soft Logic Round Table on Genie that might shed some new light on the subject....

From Jay Pierstorff....
Roughly 2/3rds of the PageStream source code is non-machine specific. That means, that Deron wanted to get the major bugs out of the Amiga version before porting it over to the ST. No sense in porting a bunch of bugs! The other 1/3 of the code is specifically filling the needs of each machine. Deron is now working on the ST version as well as finishing up work on the current Amiga version. It will shortly be turned over to the beta testers to start hammering on. There is no way to know exactly how long all this will take. Deron will NOT release it until it is ready! However, since much of the code is already completed, we may not have as long a wait as previous versions.

Amiga Version 2.1 is the last version (for the Amiga) until the ST version is completed...A few months ago we were saying that the work on ST 2.O would be "Real Soon Now". That meant it is a "planned" project but is not being worked on, and a version for Beta Testers isn't even close! Well I can't say that now...don't feel ignored. ST version 2.0 has never been closer to reality than it is today. With most of the code being completed on the Amiga, we may be very surprised to see how quickly the ST version is finished!

You can understand Softlogiks position. They don't want a repeat the events of history. Remember? Everyone voted to accept a beta version in lieu of receiving the real thing (version 1.50)? Then the pressure was on! The complaints, the customer service line was swamped with people demanding a working version etc. etc. They don't want to ship a product that is not working properly. They don't want to release a time frame for completion, in case it takes longer. You don't want them to use your money for 6 months until they can deliver your upgrade do ya? (speaking of which, Zoomracks III is about due isn't it? I ordered mine a long time ago)

From Mike Loader...
SL has not announced a release date for version 2 ST. 2.1 Amiga will come out first. 2.1 will fix outstanding problems with 2.0 and make it easier to create the ST version. Just because there have been two releases for the Amiga before version 2 ST doesn't mean SL has forgotten about the ST. It didn't make sense to port 2.0 to the ST and then have to make changes in both versions to correct bugs. Easier to correct the bugs and then port. The code is virtually identical, so all development is done at once. It's done on the Amiga because they shipped 68030's first. Simple as that. If Atari had the TT out first...

...SL just doesn't want to set an official date, because every time they do that and miss it, they catch flak. Then again, if they don't set a date they catch flak. ISD has been promising a new version of Calamus since Noah built his ark. When was ISD's last update? When did they start promising the new version of Calamus? Long before 2.0 if I recall. They've released minor fixes, but the new version is not available. Do you want to bet they are not spending time on an Amiga version as well right now?

From Nevin Shalit...

No way is it a "this is it" situation for the Atari version of Page Stream. PageStream 2.0 for the ST will be out as soon as possible. No estimate on dates, however. Hey, PageStream is not the only one. Folks have been waiting for a LONG time for the new version of Calamus and it still is not out. These are complicated programs and it takes a while to get them ready for release...PageStream/ST 2.0 will be released, have no fear...!

From Wayne Buckholdt (SofTrek) on Genie...
The number of changes made from Turbo ST, version 1.82 to version 1.84, made a patch program impractical. If you've already paid $5 to update to version 1.8 or 1.82, you can send in your original Turbo ST disk for a free upgrade to version 1.84. In general, it is SofTrek's policy not to charge for bug fixes. However, if you are upgrading from an earlier version of Turbo ST (1.0, 1.2, 1.4, or 1.6), you can get the latest 1.84 version by sending in your original disk plus $5 U.S. (check, cash or money order).

From Doug Williams on Genie...
SIPs are basically like SIMMs, but instead of a "card-edge" connector, they have a row of pins and plug into a SIP socket. BTW, SIP stands for Single-Inline-Package; basically half a DIP which has 2 rows of pins.

Remember our column from last week when we were discussing the new Gadgets 68030 accelerator board? Well, it's ready and available!! The following is an introduction by Dave Small and some general questions and answers...

Gadgets "SST" 68030 Accelerator and Memory expansion board

After all the work of the previous months, it gives me a lot of pleasure to finally announce the pricing and specs of the Gadgets "SST" 68030 accelerator board and memory expansion board. Readers of the Gadgets "Newsletter-Herald" will be receiving this same information (with more details) shortly; that newsletter is being duplicated now.

The pricing is structured around some rather expensive components. In these components, "Speed costs money -- how fast do you want to go?". We wanted fair pricing, so we went with this approach.

I'm very, very pleased to tell you that, as I promised I would try, the board sells for well under $1000. In fact, $799 will get you started into life in the fast lane.

Here's the pricing details:

Board: This is required, along with one of the three following options. This board has everything but the speed-sensitive components on it. It costs $599.

It plugs in where your 68000 used to plug in; yes, you must remove your old 68000. The board has sockets for a 68030, 68881/68882 floating point unit, and most importantly, *8* sockets for SIMMs. You can plug in up to 8 1-megabyte SIMMs (about $40 each) into the board, yielding 12

total megabytes in a Mega-4! (The board cannot be used as a simple memory expansion, without the 68030, however.)

Next, we give three options for processor. We strongly encourage you to buy your own RAM, as you'll see; it's inexpensive and we don't need to handle it, and have to pass on a price increase, to you.

Option A) is a 16 Mhz 68030. You add your own RAM (again, about $40 per megabyte). You *must* add 4 megabytes at a time; this is because the RAM is configured as 32-bit RAM, with each SIMM 8 bits. This option is meant for the budget-minded buyer; you can get basically into the 68030, then add RAM as your budget allows. Also, you can increase the speed of the processor later. This option costs $200; together with the board, it's $799 total.

Option B) is a 16 Mhz 68030, with 4 megabytes of RAM already installed. In a Mega-4, this would give you 8 megabytes total of RAM. (I'm trying to emphasize that this RAM is *added* to what's in your machine, and does not replace your machine's RAM). This option is meant for people who don't want to bother with SIMMs, and costs $460. So together with the board, it's $1059 total. (As you can see, we're encouraging you to buy your own SIMMs.)

Option C) is the rock-and-roll option. This gives you a *32* Mhz 68030, a 68882 floating point processor, and 4 megs of RAM to which you can easily add another 4 megs, for $800. Together with the board, this is $1399.

We may add more options later, as well!

Board design is by George Richardson; none of Jim Allen's 68030 board technology whatsoever is used. Many people don't know, so I'll briefly mention, that Jim and Gadgets split some time ago, in mid-summer, over what I'd term "creative differences". Gadgets and Jim are presently in the final stages of negotiating a return of advance fees paid to Jim; we're hoping to sign off on the contract any day now, when it comes back to us, and settle things up. George also did the MegaTalk design and is a GEnie "frequent user". (*grin*)

At present, the board is only for Mega-ST owners. However, we are remedying that as quickly as possible for you 520/1040 owners; I own several 520's as well, and want them to zoom too. I can't estimate time until I can announce that option until George gets over his New Year's hangover (*grin*).

To change back to "68000 mode", you must unplug the 68030 and plug in a supplied 68000 chip. This isn't a lot of fun, admittedly; however, designing the board to have both 68000 and 68030 would be prohibitively expensive, in our view.

The board also features the "George" connector, which is a complete 32-bit 33 mhz expansion connector for all sorts of interesting addon cards we have up our sleeves, but are too modest to discuss now. Gosh, wouldn't it be nice if someone did a fast-RAM color video card...did I say that? No.

The board is supplied with an Atari TOS on it that is 68030 compatible. TOS 1.4 and below are not 68030 compatible; this is because Atari used some space saving techniques to fit TOS into 192K of chips -- which saved you beaucoup $$. The new TOS is 256K long.

Why it’s the way it is --

We did much thinking on what ST owners needed, based off what we’ve seen at many shows and online on several systems. The two things that became clear were a) more memory and b) more speed.

More memory is pretty obvious; applications from page layout to sound digitizing are starting to run out of headroom inside of 4 megabytes. I know, 4 megabytes seemed a lot a few years ago; it isn’t anymore for many applications. Digital sound at 44-odd Khz eats up RAM in a hurry, for instance, as do bitmapped images in page layout, saved-up desk accessories in memory, or multiple programs in memory (like Revolver). And heck, everyone can use a 5 or so megabyte RAMdisk for those compiles, right? Spreadsheet users should particularly enjoy having 12 megs of RAM onhand. With the price of SIMMs at around $40 per megabyte (per SIMM -- I have seen prices higher and lower, so it’s about fair), it seemed a good idea to add 8 SIMM sockets to the ST.

On "more speed", the 68000 processor is limited to 16 mhz by its designers. Apparently, it can be pushed a bit higher than that, but it’s unreliable and causes intense chip heating. Anywho, the 68030 *starts* at 16 Mhz and goes up from there...to 50 Mhz at the moment. The price gets steeper as the speed goes up, however.

The 68030 features many optimizations (for instance, shifts), "thinks" 4 bytes at a time instead of 2 in the 68000, has an important on-chip 512 byte cache (data & instruction), and the all-important MMU, which allows real magic in memory manipulation. Look for some very interesting software using the MMU. Incidentally, we did not go with the brand-new 68040 because of cost (awesome) and known problems interfacing it to 68000-style machines.

The 8 megabytes of SIMM memory is physically mapped at $0100 0000, which means, at the 16 megabyte border. With the MMU, the memory can be logically mapped to anywhere we like, which allows bigtime fun. This mapping matches that of the Atari TT machine, by the way, which really was an accident; we chose that location before learning of the TT’s specs! However, it means that TT software that takes advantage of fastRAM will take advantage of our board’s RAM, too, which is the sort of coincidence I really like. (The TT features either 4 or 16 megs of RAM at this same location, depending on what type SIMM you use.)

Why did we go with fastRAM? Well, it sort of fell out naturally when we decided to give ST users the ultimate memory expansion ...

It all works like this. In the ST, the up-to-4 megs of memory built in is shared between the 68000 processor and video, 50-50. You might say it’s 16 Mhz memory, with 8 Mhz going to CPU and 8 Mhz going to video. Anyway, ANY access to this memory gets slowed down to 8 Mhz; you can’t kick] video off the memory there. (Remember on the 8-bit computers, how going to graphics 7 or 8 would slow the processor -- and turning video off sped it up? Same kind of thing).

When we added memory, we decided to make it as fast as possible for the 68030. This means, you make it 32-bits "across" so the 68030 can grab that much in one request, you isolate it from video access so it is not slowed by video request, and if you really try, you make it burst-mode ready, which is a special 68030 thing where instructions are fetched at far higher speed than normal -- if you comply with its

requirements. We complied.

What this means for you is when running in fastRAM, on either TT or the Gadgets SST, you get very good performance compared to running out of video RAM. While I am not a benchmark fan, as a "for instance", on a 32 Mhz unit, you get between 2-3 X speed increase with Quick Index benchmarks when running in fastRAM; that's why we call it fastRAM. Add to that the 68030's native speed in that mode, and its internal 512 bytes of cache, and we see 800% -- 8 times -- the speed of the ST, going up to 9 times in MOVE.L instructions, and 15 times (!!) in shift instructions.

FastRAM *is* fast because it is dedicated to the 68030, and other chips can't kick the 68030 out of fastRAM, as they can do in normal 8 Mhz RAM. Hence, fastRAM has a few restrictions on it; for instance, you can't display a video image directly from fastRAM, nor do disk DMA to it. However, in my opinion, this is no big deal. That's what the low 4 megabytes of RAM are *for* -- and if you need to do disk access to fastRAM, you use ST RAM as an in-between point. The 68030 is highly efficient at moving lots of data fast in block- copies. To the end user, all this means that it's no sweat.

Some programs will work directly with fastRAM with no changes. Others will not. Hence whether or not a program loads into fastRAM when you double-click on it, or whether it also uses fastRAM for memory block requests, can be configured for each additional programs. If you find something that breaks with fastRAM, no big deal -- set it to load in ST RAM and don't worry about it. With many programs already working directly in fastRAM, and with the TT encouraging developers to make the slight changes necessary for the ones that break, we don't foresee a problem, just lots of fun.

Should you run a program in ST RAM, well, to be honest with you, beware. IF the program "caches" nicely, it will run very fast; our benchmarks show around 7-8 times faster than an ST. If the program does NOT "cache" nicely, it will not be much faster than an ST at all! We can't predict which programs will do what; some keep things in nice tight loops, which cache ok, others spread out all over the place, which slows down bigtime. For instance, when running in Mac emulation under Spectre, the drawing routines cache nicely; you'll see quite a "snap" in performance in Mac mode. (Even in ST mode, screen updates are instantaneous from the desktop).

We do not include a "cache" memory with the SST. This was a major design decision. We are very familiar with caches; for instance, I own both a T-16 and ADSpeed accelerator, which have 16K caches (and 16K of memory to make the cache work, for 32K total). The static RAM chips used in caches are very expensive, and we wanted this board to be as inexpensive as humanly possible; caches are very program-dependent in function (some work great, some break great); there is ALREADY a 512 byte cache built into the 68030; and finally, and best of all, according to our measurements, the 8 megabytes of memory in our SIMMS *match* the speed of cache memory, through George's careful tuning of the memory channel. Why settle for 16K of cache memory when you can get 8,000K, so to speak.

Anywho, that's our baby, the 68030 SST. It gives you the ability to put 12 megabytes of RAM into your ST and accelerate it to very high speeds (certainly, speeds that are very competitive with the industry today; of the Mac II line, only the 40 Mhz IIfx, at $10K or so, outruns

the SST). We see it as "doorstop insurance"; it keeps your ST speedy, gives snappy performance, is quite TT compatible in its setup (a good thing with coming TT applications), and gives you the best ST compatibility we could do.

Atari says that about 80% of its software library works on the TT. We see no reason our board will differ from that figure. In fact, we have learned a thing or two from fixing Mac programs that break on Spectre to try on this board in software to bring the percentage even higher, if possible.

One note --

There's been a disturbing trend recently towards "developer wars"; this refers to open sniping and complaints from competing developers about their products. I've seen it and regard it as destructive to the ST market as a whole. Gadgets is committed to NOT engaging in said "developer wars". Even though there is competition in the 68030 accelerator market, we feel that our product is strong enough for us to just state the facts, and let the informed user make the decision. I've given the board specs as best as I know them and as best as I can translate them from techno into English; I'm sure I've forgotten a thing or two, and will answer any questions. But please, we've stated our decision philosophy, and why this board is the way that it is; we welcome discussion, but let's keep it at an informational level, please.

I would like to thank the many, many people that showed up for the initial "68030" discussion conference just one year ago, and tell them that we're here, partly as the result of the enthusiasm shown for the idea a year ago. (The same thing happened on Spectre, by the way. I recommend the idea of holding a conference for product ideas to other developers). The people who have supported Gadgets' products have given us enough seed money to give you more and better products, and we appreciate it very much.

We project availability of the SST in first quarter 1991, and that's not a "flexible first quarter", either. The board design is finished; it needs to go through a Beta test to uncover anything we might have missed, but SST boards have been up and running since before the WAACE show in October, where we showed it running for the first time.

We felt that giving you this information was in the best spirit of the Christmas holidays; we want you to know that good things are happening with the ST.

Merry Christmas, people, and Happy New Year!

-- thanks, Dave Small

Engineer & dishwasher, Gadgets by Small, Inc.

Questions from Nevin Shalit on Genie...

Is this a user-install or a dealer install, and will you do the install if there is no good local dealer? (for a fee, of course).

Can you buy just the $599 board and buy your own 33 mhz 68030 and RAM or do you have to buy one of the 3 configurations?

What about folks (like me) who have a strange jumper that goes from the 68000 to the blitter? I never knew why that was there in the first place!

RE: your hinted fast RAM video board--this would be for making things like PGStream redraw faster, no? Are things like DTP redraw sped up with your board or do they still go at the slower ST speed? That's the MAIN thing I want: faster redraw with PGS..!

Answers from Dave Small...

With an installation the complexity of this one (e.g., pulling the 68000), we prefer someone with a fair amount of experience do the installation. Dealer installation is preferred and we can refer people if there's no dealer close by.

Yes, you can just get the board and install your own 68030 and RAM. (See, I knew I was forgetting something in the notes...)

The blitter fix is integrated into the hardware, as I understand it. (In other words, that'll come off for good at install time.)

Fast RAM video board is still a hint; I hate to talk about stuff that is still in development. Essentially, if your program resides in fastRAM, all the calculations and work to make the draw go on at high speed, and only the actual access to write the video data goes on at ST speed. (The Atari people don't like me calling it "slow speed", *grin*, so it's "ST Speed"). Thus you'll see substantial improvement by loading PGS into fastRAM and running it.

I don't know PGS' buffer allocation scheme, so I don't know right off if it leaves video buffer alone, or allocates memory for a new one. If it leaves things alone, then all buffers can also be allocated from fastRAM, and will really make the program into a buzzsaw.

You're quite welcome on the questions; thanks for reminding me on the "bare board" offer. We just don't know how many people have access to a 68030 chip; if you do, so much the better. (Hmm, I wonder if Motorola will get lots of "Sample" requests shortly. Grin.)

Until next week....

> CHRISTMAS! STR FOCUSâ ¢ ".....A familiar tale, in a new age!"
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’Twas the night before Christmas, when all through the ship
Not a circuit was buzzing, not one microchip;
The phasers were hung in the armory securely,
In hopes that no aliens would get up that early.
The crewmen were nestled all snug in their bunks
(Except for the few who were partying drunks);
And Picard in his nightshirt and Bev in her lace,
Had just settled down for a neat face-to-face...
When out in the halls there arose such a racket,
That we leapt from our beds, pulling on pants and jacket.

Away to the lifts we all shot like a gun,
Leapt into the cars and yelled loudly, "Deck One!"
The bridge Red-Alert lights, which flashed through the din,
Gave a lustre of Hades to objects within.
When, what, on the viewscreen, should our eyes behold,
But a weird kind of sleigh, and some guy who looked old.
But the glint in his eyes was so strange and askew
That we knew in a moment it had to be Q.

His sleigh grew much larger as closer he came.
Then he zapped on the bridge and addressed us by name:
"It’s Riker! It’s Data! It’s Worf and Jean-Luc!
It’s Geordi! And Wesley, the genetic fluke!
To the top of the bridge, to the top of the hall!
Now float away! Float away! Float away all!"
As leaves in the autumn are whisked off the street,
So the floor of the bridge came away from our feet,
And up to the ceiling our bodies they flew,
As the captain called out, "What the hell is this, Q?!"
The prankster just laughed and expanded his grin,
And, snapping his fingers, he vanished again.

As we took in our plight and were looking around,
The spell was removed, and we crashed to the ground.
Then Q, dressed in fur from his head to his toe,
Appeared once again, to continue the show.
"That’s enough!" cried the captain,
"You’ll stop this at once!"

And Riker said, "Worf! Take aim at this dunce!"
"I’m deeply offended, Jean-Luc," replied Q,
"I just want to celebrate Christmas with you."
As we scoffed at his words, he produced a large sack.
He dumped out the contents and took a step back.
"I’ve brought gifts," he said, "just to show I’m sincere.
There’s something delightful for everyone here."
He sat on the floor and dug into his pile,
And handed out gifts with his most charming smile:
"For Counsellor Troi, there’s no need to explain.
Here’s Tylenol-Beta for all of your pain.
For Worf I’ve some mints as his breath’s not too great,
And for Geordi LaForge, an inflatable date.
For Wesley, some hormones, and Clearasil-Plus;
For Data, a joke book; for Riker, a truss.
For Beverly Crusher, there’s sleek lingerie,
And for Jean-Luc, the thrill of just seeing her that way."

Then he sprang to his feet with that grin on his face
And, clapping his hands, disappeared into space.
But we heard him exclaim as he dwindled from sight,
"Merry Christmas to all, and to all a good flight!"

Based on "A Visit from St. Nicholas" by Clement C. Moore

> The Future of the ST STR Featureâ ¢ "....one man's opinion"
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THE FUTURE IS NOW!

Introduction to Series

by Ralph Mariano

Hey Ralph, why did you give those guys a platform to say all those neat things about the IBM and MAC machines?? Traitor! There goes Ralph again... destroying Atari's asbestos undies! These are just a few of the more 'benign remarks' I have heard and read in the past few weeks. Its utterly amazing how when an Atarian reads or hears what he/she may construe as a disparaging remark about an Atari Computer, one can almost hear; "dem's fightin' words buddy!"

My Daddy pointed out one little ole thing to me awhile ago.. he said... "Son,.. when you wish to make a point and have it stick, there are three important things that must occur in the proper sequence. First, allow the issue to be fully explored or explained. Second and probably the most important, keep your mouth shut until the others are all done making noises. Third, rely solely upon facts and established trends if the issue(s) are expansive.

With that jewel of enlightenment behind us.. let's look at what's really being said by those who "seem" to be putting Atari down;

The first question is; are they really putting Atari down or are they venting their frustration?

The next question is easy, are truthful illustrations and examples being employed to demonstrate the points being made?

The last question to explore is; have they fully represented the facts faithfully or have the facts been presented is a rather lop-sided, "see it my way only" manner?

Many times in the past, I have read the "so-called" put-downs and see most of them as an opportunity to amplify the benefits designed into the ST computer that most of us take for granted. Often, I wonder why others don't see this opportunity and jump at the chance to use it to Atari's advantage. All that most folks seem to do is get ready for a 'war of words' instead of allowing the machines to duke it out, feature for feature, with benefits compared as a bonus. Shall we take a closer look?

You bet we will! Over the course of the next few weeks, I plan to hand out a few lumps and take a few too. The point of the series is to show the "Full Story" not an emotional, self serving blast that only gratifies the writer for a short while. The ST is still the BEST KEPT SECRET IN THE USA COMPUTER WORLD. SHAME ON YOU ATARI for that if nothing else!

The Atari ST computer, the 520, the 1040 and of course the MEGA, (The Flagship) have been around for quite a while now. What a concept the ST was when it was first announced and released! It was so far ahead of its time that most of the correspondents attempting to write about the "new marvel in computing" were forced to go the "hands on route" instead of <fluffing it> from spec sheets as many were accustomed to doing during that era.

The ST was so far ahead of the rest of the pack that many insiders felt it was a serious threat to big blue. The most amazing tidbit, that holds more truth to it today than it did then, is the simple truth that the ST and its latest relatives still are, in many cases, well ahead of their competition. Think about this for a moment, most of the features presented in the original ST are just now being matched by Big Blue! How many years later is that? How long did it take them? Mind you, I said matched NOT surpassed. I welcome enthusiastic reader participation in this series, send in your comparisons between the ST line and the 'contenders'. (your choice) Together, we'll take a long, hard look at this alleged progress that has many newfies and some old timers concerned.

Send your essays to:

ST.REPORT on GEnie ~ 70007,4454 on CIS ~ RMARIANO on Delphi.
Or, through
FNET to Node 350 ~ Fido 1:112/35.

Now is your chance to stand up and be heard!
Take advantage of this offer.

COMMODORE STOCK SURGES/ATARI STOCK SLOWS

THE TICKERTAPE

by Michael Arthur

Week I

The price of Atari stock went down 1/8 of a point on Monday, to $2 a share. It stayed at the same price from Tuesday to Thursday. On Friday the price of Atari stock went up 1/8 of a point, ending the week at $2.125 a share. On December 7, the price of Atari stock was down 1/8 of a point from its price on November 30.

Apple Stock was up 5 3/4 points from Friday, November 30, 1990.
Commodore Stock was up 1 1/4 points from 11/30/90.
IBM Stock was down 1 1/8 points from 11/30/90.

Stock Report for Week of 12/3/90 to 12/7/90

STock Reprt	Monday Last	Monday Chg	Tuesday Last	Tuesday Chg	Wednesday Last	Wednesday Chg.	Thursday Last	Thursday Chg.	Friday Last	Friday Chg
Atari	2 16,600 Sls	- 1/4	2	----	2	----	2	----	2 1/8 236,800 Sls	+ 1/8
CBM	10 1/4 513,200 Sls	+ 3/8	10 1/4	----	10 1/2	+ 1/4	10 3/4	+1/4	11 1/8 201,600 Sls	+ 3/8
Apple	38 1/8	+1 3/8	38 1/2	+3/8	40 1/8	+1 5/8	41 1/4	+1 1/8	42 1/2 2,943,400 Sls	+1 1/4
IBM	113 3/8	-1/4	114 3/4	+1 3/8	114 5/8	-1/8	111 1/2	-3 1/8	112 1/2 1,909,400 Sls	+ 1

'#' and 'Sls' refer to the # of stock shares that were bought that day.
'CBM' refers to Commodore Corporation.

Week II

COMPUTER STOCK DOWNTURN

The price of Atari stock went down 1/4 of a point on Monday, but was back up 1/8 of a point on Tuesday, to $2 a share. On Wednesday, the price of Atari stock went down 1/8 of a point, and went up 1/8 of a point on Thursday. On Friday the price of Atari stock stayed the same, ending the week at $2 a share. On December 14, the price of Atari stock was down 1/8 of a point from its price on December 7.

Apple Stock was down 2 5/8 points from Friday, December 7, 1990.

Commodore Stock down 1 3/8 points from 12/7/90.
IBM Stock was down 1/4 of a point from 12/7/90.

Stock Report for Week of 12/10/90 to 12/14/90

STock	Monday		Tuesday		Wednesday		Thursday		Friday	
Reprt	Last	Chg.	Last	Chg.	Last	Chg.	Last	Chg.	Last	Chg.
Atari	1 7/8 25,600 Sls	-1/4	2	+1/8	1 7/8	- 1/8	2	+ 1/8	2 39,800 Sls	----
CBM	11 3/4 418,700 #	+5/8	11 1/8	-5/8	11 1/2	+ 3/8	11 1/8	-3/8	9 3/4 492,500 Sls	- 1 3/8
Apple	41 3/4 2,237,400 #	-3/4	40	-1 3/4	39 5/8	- 3/8	40 3/4	+1 1/8	39 7/8 777,400 Sls	- 7/8
IBM	113 3/8	+7/8	112 7/8	-1/2	114 3/8	+1 1/2	112 7/8	-1 1/2	111 1/4 1,435,200 Sls	-1 5/8

'#' and 'Sls' refer to the # of stock shares that were bought that day.
'CBM' refers to Commodore Corporation.

> STR Mail Callâ ¢ Reader Comments and Replies
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ctsy CIS

Read action !
: 24518 S14/ST REPORT
15-Dec-90 01:39:03
Sb: #24394-new article
Fm: Bill Halvorsen 70347,1713
To: Pat Augustine 73670,2200

ST Report is doing a service as a reporting vehicle for ST users in all aspects; that includes helping people who wish to broaden their horizons to include platforms they are not familiar with if all they've known is Atari (I was one of them, and my LaserJet not functioning with the ST hurried my switch to the Clone world). This series of articles would have been of great value to me when it became Clone time; fortunately I had a great salesman who was very careful not to undersell me in the Clone capabilities even though I was totally unfamiliar with the territory.

With the capabilities afforded now through WordPerfect, Windows and soft fonts through my LaserJet I could never even consider going back to Atari. I feel it is very important for people to learn of alternatives to the machine to which they have invested heavily in time and money - all

the while the reality is changing too; software for the PC's is quite capable, though monstrously expensive. Kudos to Darek and Ralph for helping those with ST's learn what else is out there; learning is what this is all about. I see a great deal of loyalism at all costs, and close-mindedness when it concerns Atari, but perhaps it is, at last, time to help everyone be aware of alternatives; the time has come.

: 24524 S14/ST REPORT
15-Dec-90 19:22:46
Sb: #24518-new article
Fm: Pat Augustine 73670,2200

Well, I seem to be outvoted on this, so I will make one final comment, and then shut up about it.

Your comment is exactly my point. You have left the Atari community. For good (except for coming back to read ST Report, for no apparent reason). How many others will read the article, decide Darek is right, and also leave the Atari community, thus weakening the user base even more than it already is, and hastening the end of Atari support? In the end, the article merely helps destroy the computer that the magazine is supposed to support. When all Atari users have abandoned their ST's and bought clones, will ST Report suddenly become IBM Report? Or will ST Report cease to exist entirely, and if so, doesn't running the article only hasten it's own doom?

The article is perfectly valid, and this weeks was most interesting. My only point was that an ST magazine telling it's readership to buy clones is a lot like a Ford magazine telling it's readers to buy Chevy.

However, it appears I have missed the writing on the wall, and, from the responses I have gotten, the general consensus is not whether to buy a clone, but rather which clone to buy, and how to work it. The decision to abandon Atari has, apparently, already been made. In that case, then, it makes perfect sense for ST Report to ease the "transition pains" of it's readers in their move to other platforms, in these, it's final months.

I, however, will not be buying a DOS-box, regardless of their eventual cost, and if Atari support does disappear, my next computer will undoubtedly be a UNIX box (admittedly a religious decision), and given the cost of those, I would be interested in a magazine that shows how to extend the life of the hardware/software I have already invested in. Wonder where I'll find one? (You know, there is STILL a very active TI 99/4A user support base in this country. If THEY can do it, I don't see why WE can't.)

Thank you for your time, and your comments.

Mr. Augustine,

I must admit you leave little room for thought of a positive Atari future when one examines the 'flavor and tone' of your replies. It is sad to see that you insist on attacking STReport for carrying varied and well informed original articles. Perhaps we should fall into the apologist genre' or maybe adopt the 'Peter Pan', 'Mary Poppins' "everything is won-

derful" attitude? The true underscore is to relate what is actually happening in this platform good, bad, or indifferent.

Your comments are painfully absent concerning the Unix, Lynx, and the Portfolio coverage. In fact, you seem to be doting on complaining about the IBM coverage. Perhaps we (both you and the rest of us) march to different drummers. Reality is reality and that's the bottom line. As stated at The New England Atari Fest, the last thing we need do is aggressively encourage Atari to be the computer company it is not. Atari is making 'all the right moves'. Atari is the ST, STe and TT as they are the Portfolio and Lynx in the USA, not a Mac, IBM, TI99 or any other "dream". Atari will prevail in its own market in spite of the continued comparisons. Sure there are the emulators (plenty) but I use my machine in its native mode 99% of the time and still marvel at its power and ease of use.

The current condition of the Atari US marketplace has aided in the creation of the atmosphere most all are very capable of seeing. Certainly the users, developers, writers and dealers had little or nothing to do with why the market and dealer base is presently in this state of affairs. On the other hand, lack of product, advertising and solid public relations by Atari (wasn't Salerno going to cure all of these ills?) has had a great deal to do with the way the situation appears. Again, changes are being made and the folks who are currently involved give every indication that we will see a leaner, better and more represented Atari than ever seen before.

Pat Writes....

> "My only point was that an ST magazine telling it's readership to buy clones is a lot like a Ford magazine telling it's readers to buy Chevy."

** Where... in the entire issue does STReport itself recommend the purchase of anything over that of an Atari product?? Please... be accurate if not, at least be fair.....

Pat Writes...

> "In that case, then, it makes perfect sense for ST Report to ease the "transition pains" of it's readers in their move to other platforms, in these, it's final months."

** Nowhere in the issue does STReport imply or explicitly delve into the "transition" or even hint at making the changeover to another platform. Nor does STReport allude to or vaguely imply that an end is near. Unfortunately, making blatant assumptions and accusations are nothing more than shameless attempts to "kill the messenger".

Pat Writes...

> " When all Atari users have abandoned their ST's and bought clones, will ST Report suddenly become IBM Report?

** QUITE the assumption.. The Atari ST userbase is far from abandoning anything! As far as what or where STReport will be in the future, near or far, that Sir will be told only by the passage of time as will the future in general. STReport fully anticipates the ST and its descendants to be around for quite some to come. Assumptions were tidily described by an old crusty military man a few years ago. Please, dissect the word assume. <grin>

Pat Writes...

> "I would be interested in a magazine that shows how to extend the life

of the hardware/software I have already invested in. Wonder where I'll find one? "

** STReport continually amplifies exactly what you are alluding to .. the upgrading and enhancement of all our existing ST equipment. The accelerator memory expansion boards and 1.44mb drive enhancements are among those recently covered to one degree or another.

In closing, speaking as an editor, I truly value your thoughts but ask that you review your comments before you send them as it is painfully obvious they are emotionally charged. You make valid points but in the same vein, you are demanding that we practice "CENSORSHIP SUPREME" and write only of Atari and then only the glowing, warm and comfy items... that sir, simply put, is utterly impossible. By the way, the Atari ST and soon the TT is, has and will be our computer of choice. STReport and its staff will also be heavily involved in the massive learning curve demanded by Unix on our new TT030 units. Please remember never to assume... assumptions present situations that will usually result in the greatest of disasters.

Happy Holidays to All!!

Ralph.....

> STR Portfolio News & Informationâ ¢ Keeping up to date...
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THE ATARI PORTFOLIO FORUM
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On CompuServe

by Walter Daniel 75066,164

There were lots of messages this week about pocket modems. There was some concern that line-powered models might not generate enough voltage to function, but at least one forum member reported that his line-powered modem did in fact work with his Portfolio and serial interface. Some 2400 baud pocket modems sell for $150 or even less! DIP, the UK designer of the Portfolio, makes a bus modem that plugs directly into the expansion slot (i.e., no serial interface needed). The DIP modem is expensive by U.S. standards, nor is it approved for sale here.

Many messages were exchanged about the TDD1 and TDD2 3.5 inch portable floppy drives designed for use with the Tandy Model 100 and 102 notebook computers. It seems that this battery-powered drive has an RS-232 inter-

face, so some intrepid users were experimenting with connecting TDD1/TDD2 drives to their Portfolios. The TDD2 sells for around $100 used and can store about 200k on a floppy disk. The experimenters are trying to create the necessary software drivers that would enable the Portfolio to control the disk drive. I'll pass along any news about this effort.

Don Messerli uploaded a program to view graphics files on the Portfolio (PGSHOW.ZIP in library 1). The ZIP file includes six sample files for viewing. Don promises a graphics file editor for desktop PCs, a screen dump utility, and some machine language routines. I see all sorts of possibilities: page-flipping animation, help screens with mixed graphics and text, and other goodies. These programs will be free, so check them out.

Other uploads: Lane Lester uploaded a text file (LODTRM.ZIP in library 1) that explains how to get XTERM2 into a Portfolio through the serial interface for the first time. Not suggested for the easily frustrated! David Hayden uploaded a text file that describes "Dave's Dream Portfolio" (DREAM.PF in library 1). His idea was to stimulate discussion on how to improve the current generation Portfolio and solicit ideas for the next version. Finally, download FT4LPT.ARC to hack FT.COM in order to use your second printer port of your desktop PC to communicate with your Portfolio.

It is Christmas time, so let's talk about games! I've heard that Atari isn't really keen on games for the Portfolio--they'd prefer that you buy a Lynx. I'm not real big on arcade games, so I'm grateful that many "thinking" games have appeared for the Portfolio. There are a few arcade-type games, though. Look in library 4 (Entertainment). BJ Gleason is the primary culprit. He keeps uploading compact, addictive games to the forum, some of the recent ones I've mentioned in this column. Portris (PRTRIS.ZIP) is a Tetris-like game that you play with the Portfolio turned sideways. BJ's "thinking" games include Othello (OTHELL.EXE), Mastermind (MASTMD.EXE), Chess (PCHESS.ZIP), Merlin (MERLIN.ZIP), Simon (SIMON.ZIP), Life (LIFE.EXE), and others.

Card games include CASINO.COM, a blackjack game, and REDDOG.TXT, a PBASIC version of Acey-Deucy. Portfolio Score Four (PFOUR.ARC) resembles the game in which you and the computer try to get four pieces in a row (across, vertically, or diagonally) first. Tetrad7 (TETRAD.EXE) is another Tetris-like game, but this one allows you to choose the way the pieces fall (handy for lefties). There are many more games in the library, so search to find your diversion of choice.

I'll be gone the next two weeks for vacation. I will be back in the January 11th issue. As always, please forward any Portfolio news to me in the forum.

Have a wonderful and safe holiday!

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GIVING THE TT A FIGHTING CHANCE?

by Larry Karowski

A little over two years ago, Atari announced that the TT would be on sale in a few months. A few months after that they announced the STE was due out any day. Seeing that Atari was going to completely update their computer line and thinking that our computers would soon be outdated and the value of them would go way down, we took most of them to an Atari fest and sold them. Our employees switched over to using Macs, and PC 286's until the new Ataris came out.. Funny thing happened. They all decided they liked the new Macs and the new PC's. This year, our firm purchased new PC 386's rather than continue to wait for the still unavailable TT's.

Five years ago when the first ST came out, myself and a number of my fellow employees were instantly and uncontrollably in love with it. Unfortunately, three years later, there still wasn't a quality word processor available and GDOS was still in its embryonic stages. Thus, I was forced to purchase a PC to successfully achieve my word processing duties. But I still kept an ST as a solution for many other tasks. The ST was indeed still better than the PC in graphical power and entertainment. I had Windows 2.0 (Needed it for Micrographic Designer) but it was entirely unacceptable. It was no where near as good as GEM.

Microsoft has introduced Windows 3.0 and now the PC world will never be the same. After checking out Windows 3.0 and the programs written to run under it, and then looking over the TT and the obvious lack of NEW software being written for use with it. The decision was obvious at this time. I can not think of a single thing that GEM can do better then Windows 3.0. But I can think of several that Windows can do, for instance.

With Windows 3.0 you are able load a number of programs into memory and switch between them. You are able to multi-Task. Example; you can type a letter in Word for Windows and save it to your fax program. Switch to the fax program and tell it to send the fax, the line is busy.. so you tell the fax program to keep trying. With one click on the mouse you are back into Word doing something else.

Recently, I became involved in doing a manual for a new ST program we had written. I loaded Gem into a window and ran the PC version of the ST program when I had the screen I wanted I click on Print Screen, (that put an image of the screen into the clipboard) I then switched to Word and pasted the screen into the manual.. I put about 10 pictures into the manual in about 20 min.. (sized and with a border). You can also connect programs.. You can put a graph from Excel into a Word for Windows document, then load excel into memory and change the numbers in the graph, Windows 3 will automatically change the graph in the word document.

With the clipboard in windows you can cut and paste between any Window application. You can load two or three applications into memory and

switch back and forth between them moving information easily between them.

At this time, the power presented by Windows on a PC is rather extraordinary when compared to the existing GEM platforms in use by the Mac and the ST. In time, with the full arrivals of the Mega STe and the TT, provided major software development begins to take place (wasn't that Salerno's job?) thus propelling the new arrivals to the forefront of computing solutions, these new machines will then be more than competitive with their contemporaries. The heartbreaker is how many companies have the resources to wait for Atari? Competition is keen in all computer related fields. Now, time is money and if a task takes that much less time to be completed on a competitor machine, because of software support and file interchangability, the answer thus becomes painfully obvious....

> TRUST BUSTING STR FOCUSâ ¢ "..a bad mistake in pursuit of a worthy cause"
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NO LOOK & FEEL LOCK-DOWN!

Against User Interface Copyright

The European Commission has a proposal to legislate interface copyright throughout Europe. The results if this goes through would be a crushing rash of lawsuits like what you see now in the US.

If you don't want these new restrictions imposed on you, you need to get active now--at least for a few minutes, to write some letters.

An organization called the European Committee for Interoperable Systems is working to prevent the new restrictions. Contact James Beery at 23 Albemarle Street, London W1X 3HA, ENGLAND; 44-71-4081943. But this organization does not accept individuals as members, at least not currently. I am trying to work out with them a way for them to work individuals into their campaign. When I find out, I will tell rick@cstr.edinburgh.ac.uk.

Meanwhile, the US government trade negotiator is pressing for more new restrictions, and so is a group of large American companies, including IBM, DEC, and Apple, which have formed a group to lobby for them.

Here is what The Economist had to say about the original version of this measure, on page 15 in the March 10 issue:

> "A slip in Brussels could put European software writers in thrall to big American computer makers. The European Commission is set to make a bad mistake in pursuit of a worthy cause. It has drafted a directive to standardise the terms of software corpyright across Europe. Its effect will be almost as if, in the early days of electricity, power companies had been give the right to decide what appliances could be plugged into wall sockets."

The directive was originally written to established copyright on all kinds of interfaces and to ban disassembly entirely. If implemented, it would destroy ordinary programmers' chances of writing software in Europe.

On July 11, the European parliament considered the measure and made changes in an attempt to address these problems; but the changes do not do the job. For example, one change extends explicitly to interfaces the principle that copyright covers only detailed expression rather than ideas. This will not prevent interface copyright, since judges may rule that the commands of a program constitute expression--as happened in the recent Lotus case. The only way to avert interface copyright in Europe is for the law to state explicitly that interfaces are excluded from copyright.

The July 11 changes likewise included a half-measure for the issue of disassembly. It would forbid disassembly except for the purpose of making a program to work with the program being disassembled, and the information learned would have to be kept secret. Today, disassembly is legal for any purpose, and there is no public interest in restricting it at all.

The person responsible for this proposal is:

Jean-Francois Verstrynge
DG 3/D/4
Commission of the European Communities
200 Rue de la Loi
1049 Bruxelles
Belgium

If you want to block the proposal, write to him to (1) explain to him why this will hamper software development and provide the users with fewer useful choices, and (2) indicate your personal opposition as a member of the industry this is supposed to "protect".

Mr. Verstrynge is now telling people who complain about these problems that the July 11 changes have solved them. So tell him that the changes were insufficient and interface copyright must be unambiguously eliminated, for detailed commands as well as for the general style of a program.

And tell him that disassembly should not be limited in any way: if you have a copy of a program, then you have a right to read it and see what it says. Whatever you learn from disassembly about the ideas and functionality of the program, you should be free to communicate to anyone or use for any purpose, as you are today.

A letter to the European parliament would also be a good idea. They may have to vote on this, and most of them will have no idea what to do except to follow the recommendation of Mr. Verstrynge unless you start to educate them.

To help you explain more clearly, here is a position paper of the

League for Programming Freedom, which discusses all the arguments against user interface copyright. ** Note that writing to Mr. Verstrynge in your own words, making use of the arguments you find either here or elsewhere, will be more effective than simply sending a copy of this. ** However, mailing a copy of this along with your letter to the parliamentarian might be a good idea; he is not going to receive numerous copies of the same thing, and one of them will surely help.

LOOK-AND-FEEL

{Against User Interface Copyright}

The League for Programming Freedom

In June 1990, Lotus won a copyright infringement suit against Paperback Software, a small company that implemented a spreadsheet that obeys the same keystroke commands used in Lotus 1-2-3. Paperback was not accused of copying code from 1-2-3---only of supporting compatible user commands. Such imitation was common practice until unexpected court decisions in recent years extended the scope of copyright law.

Within a week, Lotus went on to sue Borland over Quattro, a spreadsheet whose usual interface has only a few similarities to 1-2-3. Lotus claims that these similarities in keystroke sequences and/or the ability to customize the interface to emulate 1-2-3 are enough to infringe.

More ominously, Apple Computer has sued Microsoft and Hewlett Packard for implementing a window system whose displays partially resemble those of the Macintosh system. Subsequently Xerox sued Apple for implementing the Macintosh system, which derives some general concepts from the earlier Xerox Star system. These suits try to broaden the Lotus decision and establish copyright on a large class of user interfaces. The Xerox lawsuit was dismissed because of a technicality; but if their planned appeal succeeds, a monopoly of unprecedented scope could still result.

And Ashton-Tate has sued Fox Software for implementing a database program that accepts the same programming language used in dBase. This is a radical demand, but in the current judicial climate, the threat cannot be dismissed.

While this paper addresses primarily the issue of copyright on specific user interfaces, most of the arguments apply with added force to any broader monopoly.

WHAT IS A USER INTERFACE?

A user interface is what you have to learn to operate a machine. The user interface of a typewriter is the layout of the keys. The user interface of a car includes a steering wheel for turning, pedals to speed up and slow down, a lever to signal turns, etc.

When the machine is a computer program, the interface includes that of the computer---its keyboard, screen and mouse---plus those aspects specific to the program. These typically include the commands, menus, programming languages, and the way data is presented on the screen.

A copyright on a user interface means a government-imposed monopoly on

its use. In the example of the typewriter, this would mean that each manufacturer would be forced to arrange the keys in a different layout.

THE PURPOSE OF COPYRIGHT

In the United States, the Constitution says that the purpose is to "promote the progress of science and the useful arts." Conspicuously absent is any hint of intention to enrich copyright holders to the detriment of the users of copyrighted works.

The Supreme Court made the reason for this absence explicit, stating in {Fox Film vs.Doyal} that "The sole interest of the United States and the primary object in conferring the [copyright] monopoly lie in the general benefits derived by the public from the labors of authors."

In other words, since copyright is a government-imposed monopoly, which interferes with the freedom of the public in a significant way, it is justified only if the benefit to the public exceeds the cost to the public.

The spirit of individual freedom must, if anything, incline us against monopoly. Following either the Supreme Court or the principle of freedom, the fundamental question is: what value does user interface copyright offer the public---and what price would we have to pay for it?

REASON #1: MORE INCENTIVE IS NOT NEEDED

The developers of the Star, the Macintosh system, 1-2-3 and dBase claim that without interface copyright there would be insufficient incentive to develop such products. This is disproved by their own actions.

Until 1986, user interface copyright was unheard of. The computer industry developed under a system where imitating a user interface was both standard practice and lawful. Under this system, today's plaintiffs made their decisions to develop their products. When faced with the choice in actuality, they decided that they did, indeed, have "enough incentive".

Even though competitors were free to imitate these interfaces, this did not prevent most of the original products from being successful and producing a large return on the investment. In fact, they were so successful that they became {de facto} standards. (The Xerox Star was a failure due to poor marketing even though nothing similar existed.)

Even if interface copyright would increase the existing incentive, additional improvements in user interfaces would not necessarily result. Once you suck a bottle dry, more suction won't get more out of it. The existing incentive is so great that it may well suffice to motivate everyone who has an idea worth developing. Extra incentive, at the public's expense, will only increase the price of these developments.

REASON #2: "LOOK AND FEEL" WILL NOT PROTECT SMALL COMPANIES

The proponents of user interface copyright claim that it would protect small companies from being wiped out by large competitors. Yet look around: today's interface copyright plaintiffs are large, established companies. User interface copyright is crushing when the interface is an effective standard. However, a small company is vulnerable when its product is little used, and its interface is little known. In this situation, user interface copyright won't help the small company much.

Imagine a small company with 10,000 customers: a large company may believe there is a potential market of a million users, not reached by the small company, for a similar product. The large company will try to use its marketing might to reach them before the small company can.

User interface copyright won't change this outcome. Forcing the large company to develop an incompatible interface will have little effect on the majority of potential customers---those who have not learned the other interface. They will buy from the large company anyway.

What's more, interface copyright will work against the small company if the large company's product becomes an effective standard. Then new customers will have an additional reason to prefer the large company. To survive, the small company will need to offer compatibility with this standard---but, due to user interface copyright, it will not be allowed to do so.

Instead of relying upon monopolistic measures, small companies are most successful when they rely on their own inherent advantages: agility, low overhead, and willingness to take risks.

REASON #3: DIVERSITY IN INTERFACES IS NOT DESIRABLE

The Copyright system was designed to encourage diversity; its details work toward this end. Diversity is the primary goal when it comes to novels, songs, and the other traditional domains of copyright. Readers want to read novels they have not yet read.

But diversity is not the goal of interface design. Computer users want consistency in interfaces because this promotes ease of use. Thus, by standardizing street signs and symbols on automobile dashboards, we have made it possible for any driver in the world to operate any car with virtually no instruction. Incompatibility in interfaces is a price to be paid when worthwhile, not a benefit.

Significantly better interfaces may be hard to think of, but it is easy to invent interfaces which are merely different. Interface copyright will surely succeed in encouraging this sort of "interface development." The result will be gratuitous incompatibility.

REASON #4: MEANINGFUL COMPETITION WILL BE REDUCED

Under the regime of interface copyright, there will be no compatible competition for established products. For a user to switch to a different brand will require retraining.

But users don't like to retrain, not even for a significant improvement. For example, the Dvorak keyboard layout, invented several decades ago, enables a typist to type faster and more accurately than is possible with the standard "QWERTY" layout. Nonetheless, few people use it. Even new typists don't learn Dvorak, because they want to learn the layout used on most typewriters.

Alternative products that require such an effort by the consumer are not effective competition. The monopoly on the established interface will yield in practice a monopoly on the functionality accessed by it. This will cause higher prices and less technological advancement---a windfall for lucky businesses, but bad for the public at large.

REASON #5: INCOMPATIBILITY DOES NOT GO AWAY

If there had been a 50-year interface copyright for the steering wheel, it would have expired not long ago. During the span of the copyright, we would have got cars steered with joysticks, cars steered with levers, and cars steered with pedals. Each car user would have had to choose a brand of car to learn to drive, and it would not be easy to switch.

The expiration of the copyright would have freed manufacturers to switch to the best of the known interfaces. But if Ford cars were steered with wheels and General Motors were steered with pedals, neither company could change interface without abandoning their old customers. It would take decades to converge on a single interface.

REASON #6: USERS HAVE INVESTED MORE MONEY THAN DEVELOPERS

The plaintiffs like to claim that user interfaces represent large investments on their part.

In fact, the effort spent designing the user interface of a computer program is usually small compared to the cost of developing the program itself. The people who make a large investment in the user interface are the users who train to use it. Users have spent much more time and money learning to use 1-2-3 than Lotus spent developing the entire program, let alone what Lotus spent develop the program's interface {per se}.

Thus, if investment justifies ownership, it is the users who should be the owners. The users should be allowed to decide---in the marketplace - who may use it. According to {Infoworld} (mid January 1989), computer users in general expect user interface copyright to be harmful.

REASON #7: DISCRIMINATION AGAINST SOFTWARE SHARING

User interface copyright discriminates against freely redistributable software, such as freeware, shareware and public domain software.

Although it {may} be possible to license an interface for a proprietary program, if the owner is willing, these licenses require payment, usually per copy. There is no way to collect this payment for a freely redistributable program. The result will be a growing body of interfaces that are barred to non-proprietary software.

Authors of these programs donate to the public the right to share them, and sometimes also to study and change their workings. This is a public service, and one less common than innovation. It does not make sense to encourage innovation of one sort with means that bar donation of another sort.

REASON #8: COPYRIGHT WILL BE A TOOL FOR EXTORTION

The scope of interface copyright is so vague and potentially wide that it will be difficult for any programmer to be sure of being safe from lawsuits. Most programs need an interface, and there is usually no way to design an interface except based on the ideas you have seen used elsewhere. Only a great genius would be likely to envision a usable interface without a deep resemblance to current practice. It follows that most programming projects will risk an interface infringement suit.

The spirit of "Millions for defense, but not a cent for tribute" is

little honored in business today. Customers and investors often avoid companies that are targets of suits; an eventual victory may come years too late to prevent great loss or even bankruptcy. Therefore, when offered a choice between paying royalties and being sued, most businesses pay, even if they would probably win.

Since this tendency is well known, companies often take advantage of it by filing or threatening suits they are unlikely to win. As long as any interface copyright exists, this form of extortion will broaden its effective scope.

REASON #9: INTERFACE COPYRIGHT INHIBITS USEFUL INNOVATION

Due to the evolutionary nature of interface development, interface copyright will actually retard progress.

Fully fleshed-out interfaces don't often arise as {tours de force} from the minds of isolated masters. They result from repeated implementations, by different groups, each learning from the results of previous attempts. For example, the Macintosh interface was based on ideas tried previously by Xerox and SRI, and before that by the Stanford Artificial Intelligence Laboratory. The Xerox Star also drew on the interface ideas that came from SRI and SAIL. 1-2-3 adapted the interface ideas of Visicalc and other spreadsheets. dBase drew on a program developed at the Jet Propulsion Laboratory.

This evolutionary process resembles the creation of folk art rather than the way symphonies, novels or films are made. The advances that we ought to encourage are most often small, localized changes to what someone else has done. If each interface has an owner, it will be difficult to implement such ideas. Even assuming the owner will license the interface that is to be improved, the inconvenience and expense would discourage all but the most determined.

Users often appreciate small, incremental changes that make programs easier or faster to use. This means changes that are upwards compatible, or affect only part of a well-known interface. Thus, on computer keyboards, we now have function keys, arrow keys, a delete key and a control key, which typewriters did not have. But the layout of the letters is unchanged.

However, such partial changes as this are not permitted by copyright law. If any significant portion of the new interface is the same as a copyrighted interface, the new interface is illegal.

REASON #10: INTERFACE DEVELOPERS DON'T WANT COPYRIGHT

At the 1989 ACM Conference on Computer-Human Interaction, Professor Samuelson of Emory School of Law presented a ''mock trial'' with legal arguments for and against user interface copyright, and then asked the attendees---researchers and developers of user interfaces---to fill out a survey of their opinion on the subject.

The respondents overwhelmingly opposed all aspects of user interface copyright, by as much as 4 to 1 for some aspects. When they were asked whether user interface copyright would harm or help the field, on a scale from 1 to 5, the average answer was 1.6.@footnote{See the May 1990 issue of the Communications of the ACM, for the full results.}

The advocates of user interface copyright say that it would provide

better security and income for user interface designers. However, the survey shows that these supposed beneficiaries would prefer to be let alone.

DO YOU REALLY WANT A USER INTERFACE COPYRIGHT, ANYWAY?

For a business, "locking in" customers may be profitable for a time. But, as the vendors of proprietary operating systems have found out, this generates resentment and eventually drives customers to try to escape. In the long run, this leads to failure.

Therefore, by permitting user interface copyright, society encourages counterproductive thinking in its businesses. Not all businesses can resist this temptation; let us not tempt them.

CONCLUSION

Monopolies on user interfaces do not serve the users and do not "promote the progress of science and the useful arts." User interfaces ought to be the common property of all, as they undisputedly were until a few years ago.

WHAT YOU CAN DO

Don’t do business "as usual" with the plaintiffs, Xerox, Lotus, Apple and Ashton-Tate. Buy from their competitors instead; sell their stock; develop new software for other computer systems and port existing applications away from their systems. Above all, don’t work for the "look and feel" plaintiffs, and don’t accept contracts from them.

Join the League for Programming Freedom---a grass-roots organization of programmers and users opposing software patents and interface copyrights. (The League is not opposed to copyright on individual programs.) Annual dues are $42 for employed professionals, $10.50 for students, and $21 for others. We appreciate activists, but members who cannot contribute their time are also welcome.

Phone us at (617) 243-4091, send Internet mail to
{league@@prep.ai.mit.edu}, or write to:

League for Programming Freedom
1 Kendall Square #143
P.O. Box 9171
Cambridge, MA 02139

Give copies of this paper to your friends, colleagues and customers. In the United States, write to your representatives and to these Congressional subcommittees:

House Subcommittee on Intellectual Property
2137 Rayburn Bldg
Washington, DC 20515

Senate Subcommittee on Patents, Trademarks and Copyrights
United States Senate
Washington, DC 20510

In Europe, the European Commission is proposing to institute interface copyright. Express your opposition by writing to:

Jean-Francois Verstrynge
DG 3/D/4
Commission of the European Communities
200 Rue de la Loi
1049 Bruxelles
BELGIUM

> STReport CONFIDENTIALâ ¢ "ATARI NEWS & EVENTS"
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- Sunnyvale, CA CALLING ALL USERGROUPS!!

As 1990 draws to a close, I am working on the 1991 schedule for user group visits and shows. It would be greatly appreciated if those of you that are contemplating having a show in 1991 would let me know about it ASAP! I expect there will be some conflicts, and the sooner we work on resolving them, the better off we'll all be.

Please try to observe some simple guidelines:

Please schedule your event at least 30 days from any other event.

Please schedule your event at least 90 days from any other event in your geographical area. It's really rough on the developers (and me!) to have to come back to back to the same area. It also hurts the attendance of the second show!!! For example, a group in Milwaukee called me to tell me about a show they planned to do less than 30 days before the Winsor/Washtenaw Show. They had their date pretty well set in concrete, and were not at all happy when I objected to it. They've chosen another date...the same weekend as CES in Chicago!!! This time less than 30 days after the Windsor show. I'm concerned, I'm sure Pattie is concerned, and boy, you should see what this club is saying about me on their BBS!!!!

Bottom line:
Check with me for dates to avoid conflicts. If your at all uncertain, please call me or send e-mail. My voice number is 408-745-2052.

So far, I've heard rumblings of shows in Vancouver, Chicago, Erie, Boston, and of course, WAACE and Glendale are already on the docket. Add to that the trade shows, plus a few user group visits (Buffalo, Knoxville, Asheville, Orlando, Santa Ana) and you've got a full calendar in short

order!!!! I've started contacting some of last years promoters like ST World, but with the holidays they might be slow to respond.

Your cooperation will ensure that we have an enjoyable 1991 for us all, Atari, users, and developers!!! Thanks in advance!

regards,

Bob Brodie

ps; having said all of the above...let me also announce that I will be on vacation December 24 - January 4. I'll be back in the office on January 7th.

- Toronto, Canada — RECAP OF RECENT NEWS ITEMS

Atari (Canada) Corp. Announcements and News:

Dec. 3, 1990	Atari announced a NEW price reduction on the 1040STe to 699.00
Nov. 20, 1990	A new monitor for the TT, the PTC 1426 will be shipped shortly. The new monitor has a unique base that integrates into the TT chassis. On the rear of the monitor is a switch that changes the video to standard VGA or the TT mode.
Nov. 12, 1990	Atari showed the new Mega STe, the machine runs at 16MHz and is built around a similar TT type case in an attractive gey color. The new Mega also incorporates the VME bus for peripheral devices. The unit is expected to arrive for shipment into the Canadian market in mid December.
Nov. 12, 1990	Atari (Canada) Corp. displayed a full line of computer products at the Cdn. Computer Show. The 32MHz TT, the New Mega STe, and new monitors for the ST and TT were displayed.
Oct. 30, 1990	A new monitor the TM194, 19 inch monochrome is announced for the TT and will be available in limited supply in early November. The retail price is 1495.00
Oct. 30, 1990	The new TT color monitor (the PTC) is available in limited qty. at a retail price of 895.00
Oct. 30, 1990	Atari Canada has been made an official subsidiary reporting directly to Sam Tramiel. Formerly, Atari Canada Corp. fell under a North American management structure. Geoff Earle has been made the Managing Director for Canada.
Oct. 15, 1990	Atari Canada will shortly be announcing the names of Canadian authorized TT dealers.
Oct. 15, 1990	Atari Canada will expand the Music packages offered

	in the 3rd quarter. We will continue to offer 520STfm and Casio keyboards. New software components will be added.
Oct. 15, 1990	Atari Canada will be reselling a new colour monitor for the ST, the SC1435 includes stereo sound and will be available at the end of October.
Oct. 15, 1990	Atari Canada will be supplying ST promotions bundled with NeoDesk. Two promotions include 520STfm, one with a colour monitor. In addition 3 promotions are based on the 1040STe one of which includes a monochrome monitor and the other the new stereo colour monitor.
Oct. 15, 1990	Atari is offering the Portfolio bundled with an AC adaptor. Two peripheral bundles are available which include the parallel adaptor/64K card, the second bundle uses the card drive and a 128K card.
August 24,1990	The originally announced clock speed of the TT has been changed to 32MHz. Initial inventory for dealers and developers is expected to arrive in October.
August 22,1990	The Atari Corp. ON LINE service will be moving to Datapak to reduce user long distance charges when accessing the service.

> CHRISTMAS IS COMING! STR InfoFileâ ¢ .....Santa’s Helpers
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PRODUCT SOURCES FOR CHRISTMAS SHOPPERS 1990

ATARI CORPORATION
1196 Borregas Avenue
Sunnyvale, CA. 94086
(408) 745-2000
Hardware - Software

ABCO Computer Electronics
P.O. Box 6672
Jacksonville, FL. 32221
(800) 562-4037
Hard Disks & Supplies

A & D Software
226 NW ’F’ Street

Antic Direct
544 Second Street
San Francisco, CA 94107
(800) 234-7001
Psygnosis Games etc...

Gribnif Software
P.O. Box 350
Hadley, MA 01035
(413) 584-7887
NeoDesk & Turbo C

ISD Marketing Inc.
2651 John St., Unit #3

Grants Pass, OR 97526
(503) 476-0071
Universal Item Selector

Alpha Systems
1012 Skyland
Macedonia, OH 44056
(216) 467-5665
16 and 8 bit Support

Atari Interface Magazine
3487 Braeburn Circle
Ann Arbor, MI 48108
(313) 973-8825
Atari Magazine and Monthly Disk

B&C ComputerVisions
3257 Kifer Road
Santa Clara, CA 95051
(408) 749-1003
Atari Products & Supplies

Branch Always Software
14150 N.E. 20th St.
Bellevue, WA 98007
(206) 936-6609
Quick ST, Software

Best Electronics
2021 The Alameda Suite 290
San Jose, CA 95126
(408) 243-6950
THE Atari parts source & Supplies

Computer Garden
WestSide Mall
Edwardsville, PA 18704
(800) 456-5689
Discount Software

Carter Graphics & Computers
914 W. Sunset Blvd.
St. George, UT 84770
(801) 628-6111
Atari Products

CodeHead Software
P.O. Box 74090
Los Angeles, CA 90004
(213) 386-5735
Software Products "Codekeys"

Comput-Ability
P.O. Box 17882
Milwaukee, WI 53217
(414) 357-8181
Atari Products & Distributor

CompuServe Information Service
P. O. Box 20212

Markham, Ontario, CA *L3R 2W5
(416) 479-1880
Calamus, DynaCadd etc...

L & Y Computers
13644c Jefferson Davis H'wy.
Woodbridge, Va. 22191
(703) 494-3444
Atari products and Software

Step Ahead Software Inc.
496-A Hudson Street Suite F39
New York City, N.Y. 10014
(212) 627-5830
Tracker ST mailing/tracking system

Mars Merchandising
1041b St. Charles Rd.
Lombard Il.
(817) 589-2950
Atari Products & Accs.

Lantech
PO Box R
Billerica, MA 01821
(508) 667-9191
10 Megabit Local Area Network

Migraph Inc.
200 S. 333rd St.
Federal Way, WA 98003
(206) 838-4677
Top Notch Graphical Products

MicroTyme
4049 Marshall Road
Kettering, OH 45429
(800) 255-5835
Discount Hardware & Software

Practical Solutions Inc.
1135 N. Jones Blvd.
Tucson, AZ 85716
(602) 322-6100
Atari support products

Prospero Software
100 Commercial St.
Suite 306 Portland, ME 04101
(207) 874-0382
Software Products

Rio Datel Computers
3430 E. Tropicana Ave., #65
Las Vegas, NE 89121
(800) 782-9110
International Products

San Jose Computers
640 Blossom Hill Road

Columbus, OH 43220-0212
(614) 457-0802
Online Services

Debonair Software
P.O. Box 521166
Salt Lake City, UT 84152
EL CAL The Math Machine
Atari Support Products

D & P Computer
P.O. Box 811
Elyria, Ohio 44036
(800) 535-4290
Atari Support Products

Double Click Software
P.O. Box 741206
Houston, TX 77274
(712) 977-6520
Software Developer

Fast Technology
P.O. Box 578
Amdover, MA 01810
(508) 475-3810
16Mhz 68000 Accelerator

Gadgets by Small
40 W. Littleton Blvd.
#210-211, Littleton, CO 80120
(303) 791-6098
Spectre GCR MAC Emulator

Goldleaf Publishing, Inc.
700 Larkspur Landing Circle,
Suite 199 Larkspur, CA 94939
(415) 461-5703
WordFlair Document Processor

Dr. Bobware
180 N. Hazeltine Avenue
Campbell, OH. 44405-1024

MVG & Modules Graphics

GEnie Information Services
401 N. Washington Street
Rockville, MD 20850-1785
(800) 638-9636
Online Services

ICD Inc.
1220 Rock St.
Rockford, Il. 61101-1437
(815) 968-2228
Hardware Peripherals

San Jose, CA 95123
(408) 224-8575
Atari Products

Sideline Software
840 NW 57th Court
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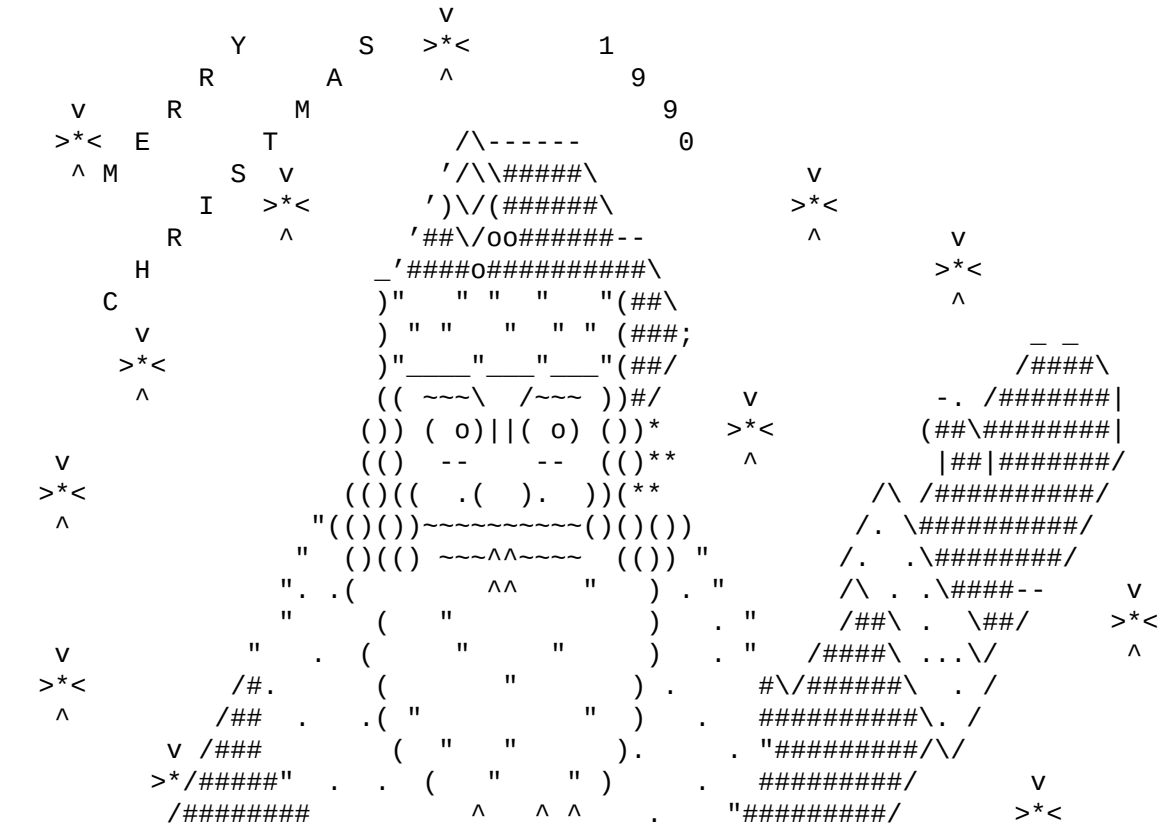

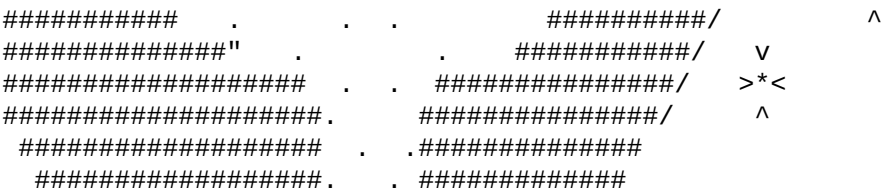

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(ASCII art by Chris Fenn)

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